REPORT OF A FATAL CASE OF GASTRO-DUODENAL ULCER; WITH AUTOPSY FINDINGS.*

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J. P. S. first called at my office on August 1st, 1901, complaining of pain in the stomach and vomiting. He gave the following history: He was a native of England, thirty-eight years old, by occupation a salesman in a hardware store. His father lived to be aged and died from some cause unknown; his mother died at thirty-six from a strangulated hernia; he had one brother living, but never had any sisters. The patient's previous history was of undisturbed good health until the onset of his stomach trouble; but for several years he had had recurring attacks similar to the one for which he now sought advice, though this one was more severe than any other he ever had. His last previous attack was in January, 1901.

The present attack began with pain in the stomach about three weeks before the patient came to me. This pain occurred especially after taking food and was always worse at night. It was felt just below the border of the ribs on the right side, was stabbing in character and ran through to the small of the back. Such pain had been present to a greater or less degree constantly during the three weeks, no matter what food was taken. Vomiting, the other chief symptom of his attack, had occurred quite regularly since the pain began. It always took place at night, but not every night, and always relieved the pain until food was again taken. The vomited material was mostly liquid, with some food particles in it, and was sour and irritating. No blood had ever been vomited, so far as the patient knew. Besides the pain and vomiting there had been a great deal of flatulence and belching. The appetite had kept good, but the man was afraid to satisfy it. At times there had been a sense of burning and soreness over the stomach, so that the pressure of the clothing could not be borne. The bowels had been persistently constipated. The patient had lost fifteen pounds in weight during the three weeks of his present illness.

Physical examination of the abdomen showed a slightly greater fullness along the right costal margin than along the left, but no other abnormality in contour; on palpation there was greater resistance in the right hypochondrium than in the left, and it was here especially that the patient complained of decided tenderness, although the epigastrium also was sore to deep pressure. There was no increase in the size of the liver or of the spleen, and no abnormality noted elsewhere in the abdomen. The heart tones were all clear, and breath sounds normal, and the urine showed no trace of albumen or sugar. After the Ewald test meal, the stomach analysis gave a total acidity of 71, with a marked reaction for free hydrochloric acid.

On this history and these findings a diagnosis was made of gastric ulcer, and the patient was advised to enter Lane Hospital for treatment. He went to the Hospital on August 2d, 1901. There he was put to bed and fed exclusively on milk, beginning with a half-ounce, with one drachm of lime water, every two hours, gradually increased until he received six ounces of milk and a half-ounce of lime water at each feeding. After this diet was begun, he never had any more pain or vomiting. In two weeks he left the Hospital and returned to his home. There he continued to receive an exclusive milk diet for two weeks more. Then gradually other articles of food were permitted, but he did not get back to general diet until the end of September. He called on me December 14th, 1901, to report himself perfectly well, having no trouble whatever with his stomach, having regained his former weight, and feeling as well as ever in his life.

I did not see the patient again until July 2d, 1902, when he called upon me, reporting that for about two weeks previous he had been annoyed once more by dyspeptic symptoms, especially pain after food and vomiting. There was some splashing on succussion and considerable tenderness over the stomach, but at that time no localized spot of tenderness. Analysis of a test meal obtained on July 3d showed a total acidity of 100: of this the free HCl was 70, the combined HCl 13 and the organic acids and acid salts 17. Hoping that the condition this time was simply a hyperchlorhydria without ulcer, I directed an exclusive proteid diet and prescribed an alkaline powder of bismuth and magnesia to neutralize the excessive acidity. But these measures afforded no relief. During my absence from the city in July, the patient consulted Dr. Henry Gibbons and was by him advised to give up his work and go to the country for rest. He went away for two weeks, but while in the country continued to suffer severely; and each evening became so distressed that regularly he was compelled to vomit, the vomiting relieving the pain.

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On August 4th he called upon me again, relating his troubles as just described. By this time the patient complained of a spot of tenderness well localized in the epigastrium, shooting through to the back. On the afternoon of August 5th another test meal was given, and the analysis showed a total acidity of 100, with free HCl 65, the combined HCl 25 and the organic acids and acid salts 10. Convinced now that an ulcer was certainly present again, I advised the man to go to bed at his home and to resume the old diet of milk and lime water exclusively. This he agreed to do. On the evening of the 5th, about 9 o'clock, while lying quietly in a reclining chair at his home, he suddenly vomited blood profusely, and had enough of a hemorrhage to cause syncope. When I arrived at his residence he had already been attended by Dr. William Himmelsbach, who lived near by, and had been revived from his faint and put to bed. He was given a hypodermic injection of morphine, an ice bag applied over the stomach and was ordered to receive absolutely nothing by mouth. He had no further hemorrhage during the night, and early the next morning, August 6th, he was removed by ambulance to Lane Hospital.

At the Hospital the orders were that the ice bag over the epigastrium should be continued; that nothing whatever should be given by mouth, and that the patient should receive every four hours a nutritive enema of peptonized milk, six ounces, with the yolks of two eggs. At 4:30 p. m. on the 6th he had a discharge from the bowels consisting of some bright red blood with many darker clots.

At 1:30 a. m. on the 7th, after sleeping the early part of the night, the patient vomited about eight ounces of bloody fluid, which left him feeling very weak; and his pulse rate, which had been about 90 on admission in the morning, now ran up to 122. Fifteen minutes later he had a copious bowel movement of black, tarry material. At 3:45 a. m. he again vomited what appeared to be clear blood, with some clots, and the pulse became so rapid and feeble it could no longer be counted at the radial. At 7:20 a. m., for the third time since midnight, he vomited blood, but this time it was small in amount and dark in color, evidently not fresh. At my visit at 9 a. m. the nurse was instructed to add ten drops of laudanum to each nutritive enema; and a mixture was prescribed containing one drachm of bismuth-subnitrate in a half-ounce of mucilage of acacia, to be given by mouth every four hours. At noon there was another copious dejection of dark, tarry material, and a third at 5 p. m. similar in character. Following this the laudanum was increased to twenty drops in each enema. Towards midnight there was still another passage from the bowels, like the others in character, but small in amount.

On the 8th all of the orders as previously given were continued, nothing being allowed by mouth except the bismuth mixture. There was no vomiting during the day, but three dejections of tarry, viscid material, evidently from the former hemorrhage.

On the morning of the 9th, the patient having had no hemorrhage since the morning of the 7th, was ordered one-half ounce of milk with one drachm of lime water by mouth every two hours. The nutritive enemata were continued, but once every six hours instead of four. The bismuth mixture was discontinued. The pulse was then 112 and of good quality, and the patient's general condition seemed much improved. For the next few days the progress of the case was in every way very satisfactory. The milk given by stomach was retained and was gradually increased, so that on the 14th he was receiving six ounces every two hours, with one-half ounce of lime water. The nutrient enemata were discontinued on the 11th. The pulse rate gradually came down to 96, the patient gained markedly in color and in strength, and the prospect seemed most encouraging.

On the evening of the 14th he complained for the first time since his hemorrhage of a pain in the stomach. This grew quite severe during the night and interfered with sleep. The ice bag gave no relief, and in spite of a hypodermic of heroin the patient had but little rest. On the morning of the 15th a hot poultice of flaxseed meal was ordered over the epigastrium, to be made very light and kept hot. This relieved the patient somewhat, but did not entirely remove the pain. On the morning of the 16th he complained not only of the pain, but of a sour taste in the mouth, of occasional belching of sour material that burned his throat and of nausea. This continued during the day, and finally at 4 p. m. he vomited a small mouthful of mucus. About fifteen minutes later he said he felt a flash pass before his eyes, and immediately afterwards vomited a copious amount of dark-brown fluid that on examination proved to be partially digested blood. The poultice was at once replaced by the ice bag and all feeding by mouth discontinued. The patient continued to be nauseated, was troubled constantly by hiccough and complained of hot and cold flashes going over his body. At 5:45 p. m. he again vomited a small amount of dark fluid, and at 6 p. m. five ounces of the same material. But after that he had no more distress, and during the night obtained considerable sleep at intervals.

On the morning of the 17th, as no vomiting had occurred since 6 o'clock the evening before, feeding by mouth was resumed, beginning with one ounce of milk every two hours. During the 17th, 18th and 19th all again went well, and the amount of milk allowed was gradually increased until on the morning of the 20th the patient was again receiving his six ounces every two hours. He was then feeling perfectly well, though weak. At 11:45 a. m. he vomited some curdled milk, but

not discolored, and as the vomiting was not repeated the nourishment was not discontinued.

On the 21st he continued to take his full allowance of nourishment all day without discomfort; but at 7 p. m., while drinking his milk, he again felt a sudden flash of light and vomited ten ounces of dark fluid resembling coffee-grounds. Again all nourishment by mouth was at once stopped; the ice bag was reapplied over the epigastrium; a hypodermic of morphine and atropin was given, and the nutritive enemata were resumed. No further vomiting occurred that night.

On the 22d, there having been no further vomiting, the patient was given at 10:30 a. m. one-half ounce of peptonized milk, but vomited it almost immediately. No further attempt to feed by mouth was made that day. Nevertheless, at 5 p. m. he vomited again, two ounces of greenish fluid, but no blood.

Early on the morning of the 23d, about 2 o'clock, vomiting occurred again, of a small amount of mucus but no blood. The patient was greatly nauseated the rest of the night and could not sleep. He had had no nourishment since the evening of the 21st except his rectal enemata, and felt very weak and wretched. At 6 a. m. he was finally given a hypodermic of morphine and under its influence slept for several hours. At 11 a. m. a half-ounce of warm milk was given by mouth and retained, and every hour thereafter during the day. During the night this amount was doubled.

On the morning of the 24th it was discovered that both sides of the face were swollen and that it was hard for the patient to swallow. The temperature also rose during the day, so that at 5 p. m. it was 102 degrees. On examination it was found that a double parotitis had developed as a complication. This was treated simply by applications of hot camphorated oil. The patient was able to take one ounce of milk by mouth every two hours during the day, without nausea.

During the 25th two ounces of milk were taken every two hours and retained without any trouble. The temperature gradually fell and the swelling of the parotids decreased.

On the morning of the 26th the milk was increased to three ounces. During the day the patient complained of some pain in the abdomen, belched occasionally and was very restless; but there was no vomiting until 5 p. m., when he once more rejected his milk. He continued nauseated, and at 6:20 again vomited a small amount of curdled milk and some particles of disintegrated blood. All nourishment by mouth was necessarily discontinued. At 10 p. m. he had a copious, loose dejection, dark in color and tarry in consistency.

On the 27th the case rapidly proceeded to its climax. At 4:45 a. m. there was a second dejection of the same character as that of the evening before, a third at 7:15, a fourth at 11, and a fifth at 2:30 p. m., all of these passages consisting of old, digested blood. Meantime at 4 a. m. the patient had again vomited a small amount of bloody fluid, and again at 7 and at 11. Towards evening he became irrational and attempted to get out of bed. During the night he lay in a semi-comatose condition, had repeatedly small, loose passages from the bowels and vomited small amounts of bright blood.

On the morning of the 28th at 8 o'clock he vomited again bright blood. Meantime efforts had been made by means of strychnin hypodermically, infusions of normal salt solution and binding the lower limbs, to prevent collapse; but at 8:45 a. m. he expired.

Autopsy was made the same day at noon by Dr. William Ophuls, whose report is as follows:

"The post mortem was confined to the stomach. The stomach itself was of normal size. There was slight obstruction of the pylorus on the posterior surface; on the inside of the pylorus and the beginning of the duodenum there was an ulceration about two by three c. m. and about one-half c. m. deep. The edges of the ulcer were sharply cut. The ulcer was nearly oval. The bottom of the ulcer was clean, formed by a thin layer of fibrous tissue, through which one could see the pancreas. Near the middle and not quite in the middle of the ulcer there was an opening about two m. m. in diameter which led into a large branch of the arteria gastroduodenalis, About one-third of the ulcer was in the stomach and two-thirds in the duodenum."

Could anything more have been done than was done to save the life of this man? From a medical standpoint, I am convinced that no plan of medication or dietetic or hygienic treatment could have overcome the pathological condition that autopsy revealed. From a surgical standpoint, the case was discussed with Dr. Emmet Rixford, who saw it repeatedly with me in consultation. Before the first hemorrhage there was certainly no indication for operation. After the first hemorrhage, when Dr. Rixford first saw the case, the patient's condition was not such as to warrant operation even if it had been considered indicated. After the temporary improvement that followed the first hemorrhage, the blood count showed only 2,240,000 red corpuscles as the highest figure reached. After the second hemorrhage, surgical procedure such as would have been required to cure was never possible, because of the patient's reduced condition. On the 27th, the day before death, the red corpuscles were but 896,000 and the hemoglobin only twenty per cent.

I was convinced by the course of the case that the ulcer was situated in or close to the pylorus, so that whenever the quantity of milk given became sufficiently large to nourish the patient satisfactorily, peristalsis interfered with healing and led to fresh hemorrhage. With this condition in view, the operation contemplated was gastro-enterostomy, to put the pylorus at rest; but never

after the second hemorrhage was the patient's condition such as to justify the carrying out of this procedure. The autopsy showed us that excision of the ulcer could never have been done without removal of both the lower end of stomach and upper end of duodenum; even if gastro-enterostomy had been performed, the fatal erosion of the large vessel involved would in all probability have occurred just the same. It is difficult to see, therefore, in the retrospect of the case, knowing what we finally learned of the lesion present, how the ultimate catastrophe could have been averted.

CALIFORNIA ACADEMY OF MEDICINE.

REGULAR MEETING FOR OCTOBER.

DR. WILLIAM FITCH CHENEY read a paper entitled "Report of a Fatal Case of Gastric Ulcer, with Post Mortem Findings." Before reading his paper, Dr. Cheney called attention to the fact that the title as printed on the notices was somewhat erroneous; it was really a case of gastro-duodenal ulcer. The paper in full will be found on another page of the Journal.

Dr. Quinan said that there were several points of interest to him in the paper of Dr. Cheney. The temperature range was of great interest. Prominent surgical authorities were about equally divided as to whether early operation was advisable or not. In the present case, from the blood studies reported, he had no doubt that the method of internal medication as followed by Dr. Cheney was the best treatment that could have been employed. He asked whether the use of eggs in the enemata which were given to the patient was for a desired emollient effect, or for nourishment.

Dr. Barbat recalled a patient that he had recently seen in whose case there were some points of similarity to that of Dr. Cheney's patient. When he first saw her she seemed anemic and weak; the blood count showed 2,500,000, and the hemoglobine was 65 per cent. Pain after eating was marked and the diagnosis of gastric ulcer seemed very clear. Tonic and simple diet were prescribed. She improved rapidly and was not again seen until two months ago, when all the symptoms of gastric ulcer were again well marked and her general condition was worse than when first seen. Between Saturday and Monday evening she had four quite severe hemorrhages, and it was decided to operate. Cocain anesthesia was employed and the abdomen opened. Careful examination of the stomach did not reveal the presence of an ulcer, though every clinical symptom pointed to its presence. The viscera seemed to be absolutely bloodless. Patient died shortly after, and even when the stomach was removed the ulcer was with some difficulty found on the lesser curvature. It was small, indurated, and at the center was a perforation into a blood-vessel. He thought that a great deal of damage was caused by the destruction of blood, and that the depression, anemia, etc., was as much due to this destruction of the blood as to the ulcer itself or to the loss of blood by hemorrhage. The specimen was presented and examined with great interest by those present.

Dr. Wilbur mentioned a rather unusual case that he had recently encountered. The patient was a young man who had, shortly before coming under observation, been in the Philippines. The only history obtainable was that after a hearty meal the young man had engaged in a scuffle and that shortly afterward some pain in the abdomen was noted. It was not at the region of the stomach, but was near McBurney's point. There was no special indication of appendicitis, however. He had a severe attack of pain, while at Stanford University, to relieve which, chloroform was employed. On coming out from the anesthetic there was great relief. Later the pain returned; dullness and tenderness were found in the right hypochondriac region, and it was decided to send him to this city for hospital attention. He arrived in a comatose condition. There was no vomiting save after medicines had been taken. The temperature ran up rapidly on the following day, appendicitis was suspected and operation was decided upon. The appendix was found to be only a trifle hyperemic. When the belly was opened a few drops of a milk-like fluid ran out. He vomited one and one-half quarts of mixed food and blood. The wound was closed and an opening made higher up, which disclosed the presence of an ulcer; this was cut out and the wound sutured; the patient died a few hours later of surgical shock.

Dr. Ophuls, in discussing the case presented by Dr. Cheney, said that two points of interest presented themselves to him. First, the ulcer was found with some difficulty, even after the removal of the stomach post mortem. He doubted that it could have been found at all if an operation had been performed; certainly not easily. Second, the history pointed to two ulcers—one old and healed and the other more recent. It is certainly true that very large ulcers of the stomach wall may exist without producing symptoms at all diagnostic. He agreed with Dr. Barbat in the belief that as much damage to the patient resulted from the simple destruction of blood as from the ulcer itself or the hemorrhages.

Dr. Huntington dwelt upon the fact that dilatation of the stomach, which is supposed to be an ever present symptom when the pylorus is affected, was absent in the case reported by Dr. Cheney, and was absent in a number of cases observed by himself; or, if not absent, too trifling to be of note. He referred to a patient whose